AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listing of claims in the application.

Listing of Claims:

1. (Currently Amended). A display device providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual sub-fields that are defined by dividing one field and arranged on a time base in a prescribed order, said sub-fields being weighted to represent gray levels:

wherein said plurality of sub-fields are weighted in such a way that at least one non-display gray level which cannot be displayed by combining said plurality of sub-fields is arranged between displayable gray levels by combining said plurality of sub-fields,

and wherein said display device comprises,

a diffuser that receives ~~diffusion means receiving~~ said video signal for, when said video signal represents said non-display gray level, diffusing temporally and/or spatially a difference between said non-display gray level and one of said display gray levels so that said non-display gray level can be equivalently displayed with said display gray levels;

a sub-field ~~correspondence means for converting~~ corresponder that converts a video signal representing one field output from said ~~diffusion means~~ diffuser into a video signal representing individual sub-fields; and

an emitter that controls ~~emitting means for controlling~~ said pixels on said display panel so that each pixel emits light or does not emit light in said individual sub-fields, in accordance with said video signal representing said individual sub-fields output from said sub-field ~~correspondence means~~ corresponder.

2. (Currently Amended) The display device according to claim 1, wherein said ~~diffusion means~~ diffuser includes:

a gray level ~~conversion means for converting~~ converter that converts said non-display gray level into one of said display gray levels that is close to said non-display gray level, and

an error ~~diffusion means for diffusing~~ diffuser that diffuses, when said non-display gray level is converted into said one of said display gray levels by said gray level ~~conversion means~~ converter, a difference between said non-display gray level and said one of said display gray levels to pixels around a pixel having said non-display gray level.

3. (Currently Amended) The display device according to claim 1, wherein said ~~diffusion means~~ diffuser includes:

a dither ~~diffusion means for alternately adding or subtracting~~ diffuser that alternately adds or subtracts a difference between said non-display gray level and one of said display gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

4. (Currently Amended) The display device according to claim 1, wherein at least two continuous non-display gray levels are included between said display gray levels, and

said ~~diffusion means~~ diffuser includes:

a dither ~~diffusion means for alternately adding or subtracting~~ diffuser that alternately adds or subtracts a difference between one non-display gray level included in said at least two continuous non-display gray levels and one of said display gray levels that is close to said one non-display gray level to diffuse between fields or between pixels,

a gray level ~~conversion means for converting~~ converter that converts another non-display gray level included in said at least two continuous non-display gray levels into a gray level close to said another non-display gray level among said display gray levels and a gray level rendered displayable by said dither diffusion means, and

an error ~~diffusion means for diffusing~~ diffuser that diffuses, when said another non-display gray level is converted by said gray level ~~conversion means~~ converter, a

difference between said another non-display gray level and the converted gray level to pixels around a pixel having said another non-display gray level.

5. (Currently Amended) The display device according to claim 1, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display device further comprises,

a lower ~~diffusion means receiving~~ diffuser that receives said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a selector that selects ~~selection means for selecting~~ an output of said ~~diffusion means~~ diffuser when the gray level of the digital video signal output from said lower ~~diffusion means~~ diffuser is not less than the minimum value of said non-display gray level and for selecting an output of said lower ~~diffusion means~~ diffuser when the gray level of the digital video signal output from said lower ~~diffusion means~~ diffuser is less than the minimum value of said non-display gray level and for outputting the selected output to said sub-field ~~correspondence means~~ corresponder.

6. (Currently Amended) The display device according to claim 1, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display device further comprises,

a lower ~~diffusion means receiving~~ diffuser that receives said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a ~~selection means for selecting~~ selector that selects the digital video signal not yet diffused by said lower ~~diffusion means~~ diffuser when the gray level of the digital video signal output from said lower ~~diffusion means~~ diffuser is not less than the minimum value of said non-display gray level and for selecting an output of said lower ~~diffusion means~~ diffuser when the gray level of the digital video signal output from said lower ~~diffusion means~~ diffuser is less than the minimum value of said non-display gray level,

and wherein said ~~diffusion means~~ diffuser includes a dither ~~diffusion means receiving~~ diffuser that receives the digital video signal output from said ~~selection means~~ selector, for alternately adding or subtracting a difference between said non-display gray level and a display one of gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

7. (Currently Amended) The display device according to claim 1, wherein said video signal is a digital video signal expressed by a plurality of bits,

at least two continuous non-display gray levels are included between said display gray levels,

and wherein said display device further comprises,

a lower ~~diffusion means receiving~~ diffuser that receives said digital video signal, for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level,

a ~~selection means for selecting~~ selector that selects an output of said ~~diffusion means~~ diffuser when the gray level of the digital video signal output from said lower ~~diffusion means~~ diffuser is not less than the minimum value of said non-display gray level and for selecting an output of said lower ~~diffusion means~~ diffuser when the gray level of the digital video signal output from said lower ~~diffusion means~~ diffuser is less than the minimum value of said non-display gray level, and

a dither ~~diffusion means receiving~~ diffuser that receives the digital video signal output from said ~~selection means~~ selector, for alternately adding or subtracting a difference between one non-display gray level included in said at least two continuous non-display gray levels and one of said display gray levels that is close to said one non-display gray level to diffuse between fields or between pixels,

said ~~diffusion means~~ diffuser includes:

a gray level ~~conversion means for converting~~ converter that converts another non-display gray level included in said at least two continuous non-display gray levels into a gray level close to said another non-display gray level among said display gray levels and a gray level rendered displayable by said dither ~~diffusion means~~ diffuser, and

an error ~~diffusion means for diffusing~~ diffuser that diffuses, when said another non-display gray level is converted by said gray level ~~conversion means~~ converter, a difference between said another non-display gray level and the converted gray level to pixels around a pixel having said another non-display gray level.

8. (Currently Amended) A display method for providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual sub-fields that are defined by dividing one field and arranged on a time base in a prescribed order, said sub-fields being weighted to represent gray levels:

wherein said plurality of sub-fields are weighted in such a way that at least one non-display gray level which cannot be displayed by combining said plurality of sub-fields is arranged between displayable gray levels by combining said plurality of sub-fields,

and wherein said display method comprises ~~the steps of~~,

receiving said video signal for, when said video signal represents said non-display gray level, diffusing temporally and/or spatially a difference between said

non-display gray level and one of said display gray levels so that said non-display gray level can be equivalently displayed with said display gray levels;

converting a video signal representing one field processed ~~in said step of~~ by diffusing into a video signal representing individual sub-fields; and

controlling said pixels on said display panel so that each pixel emits light or does not emit light in said individual sub-fields in accordance with said converted video signal representing said individual sub-fields.

9. (Currently Amended) The display method according to claim 8, wherein ~~said step of~~ diffusing includes ~~the steps of~~:

converting said non-display gray level into one of said display gray levels that is close to said non-display gray level, and

diffusing, when said non-display gray level is converted into said one of said display gray levels, a difference between said non-display gray level and said one of said display gray levels to pixels around a pixel having said non-display gray level.

10. (Currently Amended) The display method according to claim 8, wherein ~~said step of~~ diffusing includes ~~the step of~~:

alternately adding or subtracting a difference between said non-display gray level and one of said display gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

11. (Currently Amended) The display method according to claim 8, wherein at least two continuous non-display gray levels are included between said display gray levels,

and wherein ~~said step of~~ diffusing includes ~~the steps of~~:

alternately adding or subtracting a difference between one non-display gray level included in said at least two continuous non-display gray levels and one of said display gray levels that is close to said one non-display gray level to diffuse between fields or between pixels,

converting another non-display gray level included in said at least two continuous non-display gray levels to a gray level close into said another non-display gray level among said display gray levels and a gray level rendered displayable in said step of adding or subtracting to diffuse, and

diffusing, when said another non-display gray level is converted, a difference between said another non-display gray level and the converted gray level to pixels around a pixel having said another non-display gray level.

12. (Currently Amended) The display method according to claim 8, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display method further comprises ~~the steps of,~~ :

receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the

minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

selecting the digital video signal processed by diffusing temporally and/or spatially when the gray level of the digital video signal obtained by diffusing said data of a bit lower by one digit is not less than the minimum value of said non-display gray level or selecting the digital video signal obtained by diffusing said data of a bit lower by one digit when the gray level of the digital video signal obtained by diffusing said data of a bit lower by one digit is less than the minimum value of said non-display gray level.

13. (Currently Amended) The display method according to claim 8, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display method further comprises ~~the steps of,~~ :

receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

selecting the digital video signal not processed by diffusing said data of a bit lower by one digit when the gray level of the digital video signal obtained by diffusing said data of a bit lower by one digit is not less than the minimum value of said non-display gray level or selecting the digital video signal obtained by diffusing said data

of a bit lower by one digit when the gray level of the digital video signal obtained by diffusing said data of a bit lower by one digit is less than the minimum value of said non-display gray level,

and wherein ~~said step of~~ diffusing temporally and/or spatially includes ~~the step of~~ receiving the selected digital video signal ~~selected in said step of selecting~~ , for alternately adding or subtracting a difference between said non-display gray level and one of gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

14. (Currently Amended) The display method according to claim 8, wherein said video signal is a digital video signal expressed by a plurality of bits, and

at least two continuous non-display gray levels are included between said display gray levels,

and wherein said display method further comprises ~~the steps of,~~ :

receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level,

selecting the digital video signal processed by diffusing temporally and/or spatially when the gray level of the digital video signal obtained by diffusing said data of a bit lower by one digit is not less than the minimum value of said non-display gray

level or selecting the digital video signal obtained by diffusing said data of a bit lower by one digit when the gray level of the digital video signal obtained by diffusing said data of a bit lower by one digit is less than the minimum value of said non-display gray level, and

receiving the selected digital video signal ~~selected in said step of selecting~~ , for alternately adding or subtracting a difference between one non-display gray level included in said at least two continuous non-display gray levels and one of said display gray levels that is close to said one non-display gray level to diffuse between fields or between pixels,

and wherein ~~said step of~~ diffusing temporally and/or spatially includes ~~the steps of,~~ :

converting another non-display gray level included in said at least two continuous non-display gray levels into a gray level close to said another non-display gray level among said display gray levels and a gray level rendered displayable in said step of adding or subtracting to diffuse, and

diffusing, when said another non-display gray level is converted, a difference between said another non-display gray level and the converted gray level to pixels around a pixel having said another non-display gray level.

15. (Original) A display device providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual sub-fields that are defined by

dividing one field and arranged on a time base in a prescribed order, said sub-fields being weighted to represent gray levels:

wherein said plurality of sub-fields are weighted in such a way that at least one non-display gray level which cannot be displayed by combining said plurality of sub-fields is arranged between displayable gray levels by combining said plurality of sub-fields,

and wherein said display device comprises,

a diffusion circuit that receives said video signal for, when said video signal represents said non-display gray level, diffusing temporally and/or spatially a difference between said non-display gray level and one of said display gray levels so that said non-display gray level can be equivalently displayed with said display gray levels;

a sub-field corresponder that converts a video signal representing one field output from said diffusion circuit into a video signal representing individual sub-fields; and

an emitting circuit that controls said pixels on said display panel so that each pixel emits light or does not emit light in said individual sub-fields, in accordance with said video signal representing said individual sub-fields output from said sub-field corresponder.

16. (Original) The display device according to claim 15, wherein said diffusion circuit includes:

a gray level conversion table that converts said non-display gray level into one of said display gray levels that is close to said non-display gray level, and

an error diffusion circuit that diffuses, when said non-display gray level is converted into said one of said display gray levels by said gray level conversion table, a difference between said non-display gray level and said one of said display gray levels to pixels around a pixel having said non-display gray level.

17. (Original) The display device according to claim 15, wherein said diffusion circuit includes:

a dither diffusion circuit that alternately adds or subtracts a difference between said non-display gray level and one of said display gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

18. (Original) The display device according to claim 15, wherein at least two continuous non-display gray levels are included between said display gray levels, and

said diffusion circuit includes:

a dither diffusion circuit that alternately adds or subtracts a difference between one non-display gray level included in said at least two continuous non-display gray levels and one of said display gray levels that is close to said one non-display gray level to diffuse between fields or between pixels,

a gray level conversion table that converts another non-display gray level included in said at least two continuous non-display gray levels into a gray level close to said another non-display gray level among said display gray levels and a gray level rendered displayable by said dither diffusion circuit, and

an error diffusion circuit that diffuses, when said another non-display gray level is converted by said gray level conversion table, a difference between said another non-display gray level and the converted gray level to pixels around a pixel having said another non-display gray level.

19. (Original) The display device according to claim 15, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display device further comprises,

a lower diffusion circuit that receives said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a selection circuit that selects an output of said diffusion circuit when the gray level of the digital video signal output from said lower diffusion circuit is not less than the minimum value of said non-display gray level and selects an output of said lower diffusion circuit when the gray level of the digital video signal output from said lower

diffusion circuit is less than the minimum value of said non-display gray level and outputs the selected output to said sub-field corresponder.

20. (Original) The display device according to claim 15, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display device further comprises,

a lower diffusion circuit that receives said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a selection circuit that selects the digital video signal not yet diffused by said lower diffusion circuit when the gray level of the digital video signal output from said lower diffusion circuit is not less than the minimum value of said non-display gray level and selects an output of said lower diffusion circuit when the gray level of the digital video signal output from said lower diffusion circuit is less than the minimum value of said non-display gray level,

and wherein said diffusion circuit includes a dither diffusion circuit that receives the digital video signal output from said selection circuit, for alternately adding or subtracting a difference between said non-display gray level and one of gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

21. (Original) The display device according to claim 15, wherein said video signal is a digital video signal expressed by a plurality of bits,

at least two continuous non-display gray levels are included between said display gray levels,

and wherein said display device further comprises,

a lower diffusion circuit that receives said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level,

a selection circuit that selects an output of said diffusion circuit when the gray level of the digital video signal output from said lower diffusion circuit is not less than the minimum value of said non-display gray level and selects an output of said lower diffusion circuit when the gray level of the digital video signal output from said lower diffusion circuit is less than the minimum value of said non-display gray level, and

a dither diffusion circuit that receives the digital video signal output from said selection circuit, for alternately adding or subtracting a difference between one non-display gray level included in said at least two continuous non-display gray levels and one of said display gray levels that is close to said one non-display gray level to diffuse between fields or between pixels,

said diffusion circuit includes:

a gray level conversion table that converts another non-display gray level included in said at least two continuous non-display gray levels into a gray level close to said another non-display gray level among said display gray levels and a gray level rendered displayable by said dither diffusion circuit, and

an error diffusion circuit that diffuses, when said another non-display gray level is converted by said gray level conversion table, a difference between said another non-display gray level and the converted gray level to pixels around a pixel having said another non-display gray level.

22. (Currently Amended) A display device providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual N (N: natural number of not less than 1) sub-fields SF1, SF2, ···, SFN that are defined by dividing one field and arranged on a time base in a prescribed order:

wherein said N sub-fields SF1, SF2, ···, SFN are weighted to represent gray levels and said N sub-fields SF1, SF2, ···, SFN have ~~small~~ larger or equal weights in this order, and

said N sub-fields SF1, SF2, ···, SFN include at least one such sub-field SFM that a difference between the weight of the sub-field SFM and the sum of the weights from the sub-field SF1 to the sub-field SF(M-1) exceeds the weight of the sub-field SF1, whereby

the gray scale of the video signal includes at least one non-display gray level non-displayable by combining said N sub-fields between displayable gray levels by combining said N sub-fields,

and wherein said display device comprises~~,~~:

~~conversion means for~~ a converter that, when the gray scale of said input video signal is said non-display gray level, ~~converting~~ converts the gray scale of said input video signal into one of said display gray levels that is close to said non-display gray level, and further comprising:

a diffuser that at least one of diffuses temporally and spatially a difference between said non-display gray level and one of said display gray levels so as to equivalently display said non-display gray level with said one of said display gray levels that is converted by said converter and close to said non-display gray level.

23. (Canceled).

24. (Withdrawn) The display device according to claim 23, wherein said diffusion means includes:

dither diffusion means for alternately adding or subtracting between fields or between pixels a difference between said non-display gray level and one of said display gray levels that is close to said non-display gray level, so as to display said non-display gray level with said one of said display gray levels that is close to said non-display gray level.

25. (Currently Amended) The display device according to claim ~~23~~ 22, wherein said ~~diffusion means includes~~ diffuser comprises:

~~error diffusion means for diffusing~~ an error diffuser that diffuses a difference between said non-display gray level and said one of said display gray levels to pixels around a pixel having said non-display gray level.

26. (Withdrawn) A display device providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual N (N: natural number of not less than 1) sub-fields SF1, SF2, ···, SFN that are defined by dividing one field and arranged on a time base in a prescribed order:

wherein said N sub-fields SF1, SF2, ···, SFN are weighted to represent gray levels and said N sub-fields SF1, SF2, ···, SFN have small or equal weights in this order, and

said N sub-fields SF1, SF2, ···, SFN include at least one such sub-field SFM that a difference between the weight of the sub-field SFM and the sum of the weights from the sub-field SF1 to the sub-field SF(M-1) exceeds twice the weight of the sub-field SF1, whereby

the gray scale of the video signal includes at least two continuous non-display gray levels non-displayable by combining said N sub-fields between displayable gray

levels by combining said N sub-fields and said at least two non-display gray levels belong to a first group or a second group respectively,

and wherein said display device comprises,

first conversion means for, when the gray scale of the input video signal is a non-display gray level of the first group, converting the gray scale of said input video signal into a non-display gray level of the second group that is close to said non-display gray level of the first group or one of said display gray levels that is close to said non-display gray level of the first group; and

second conversion means for, when the gray scale of the input video signal is a non-display gray level of the second group or said non-display gray level of the second group converted by said first conversion means, converting the gray scale of said input video signal into one of said display gray levels that is close to said non-display gray level of the second group.

27. (Withdrawn) The display device according to claim 26, further comprising:

error diffusion means for diffusing a difference between said non-display gray level of the first group and said non-display gray level of the second group or said one of said display gray levels converted by said first conversion means to pixels around a pixel having said non-display gray level of the first group, and

dither diffusion means for alternately adding or subtracting a difference between said non-display gray level of the second group and said one of said display gray levels converted by said second conversion means, so as to display said non-

display gray level of the second group with said one of said display gray levels that is close to said non-display gray level of the second group.

28. (Withdrawn) The display device according to claim 23, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display device further comprises,

lower diffusion means receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

selection means for selecting an output of said diffusion means when the gray level of the digital video signal output from said lower diffusion means is not less than the minimum value of said non-display gray level and for selecting to display an output of said lower diffusion means when the gray level of the digital video signal output from said lower diffusion means is less than the minimum value of said non-display gray level.

29. (Withdrawn) The display device according to claim 23, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display device further comprises,

lower diffusion means receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

selection means for selecting the digital video signal not yet diffused by said lower diffusion means when the gray level of the digital video signal output from said lower diffusion means is not less than the minimum value of said non-display gray level and for selecting an output of said lower diffusion means when the gray level of the digital video signal output from said lower diffusion means is less than the minimum value of said non-display gray level,

and wherein said diffusion means includes dither diffusion means receiving the digital video signal output from said selection means, for alternately adding or subtracting a difference between said non-display gray level and one of gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

30. (Withdrawn) The display device according to claim 27, wherein said video signal is a digital video signal expressed by a plurality of bits,

at least two continuous non-display gray levels are included between said display gray levels,

and wherein said display device further comprises,

lower diffusion means receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level,

selection means for selecting to display an output of said lower diffusion means when the gray level of the digital video signal output from said lower diffusion means is less than the minimum value of said non-display gray level.

31. (Currently Amended) A display method for providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual N (N: natural number of not less than 1) sub-fields SF1, SF2, ···, SFN that are defined by dividing one field and arranged on a time base in a prescribed order:

wherein said N sub-fields SF1, SF2, ···, SFN are weighted to represent gray levels and said N sub-fields SF1, SF2, ···, SFN have ~~small~~ larger or equal weights in this order, and

said N sub-fields SF1, SF2, ···, SFN include at least one such sub-field SFM that a difference between the weight of the sub-field SFM and the sum of the weights from the sub-field SF1 to the sub-field SF(M-1) exceeds the weight of the sub-field SF1, whereby

the gray scale of the video signal includes at least one non-display gray level non-displayable by combining said N sub-fields between displayable gray levels by combining said N sub-fields,

and wherein said display method comprises[[,]]:

~~a conversion step of~~ converting, when the gray scale of the input video signal is said non-display gray level, ~~converting~~ the gray scale of said input video signal into one of said display gray levels that is close to said non-display gray level, and further comprising:

diffusing at least one of temporally ~~and/or~~ and spatially a difference between said non-display gray level and said converted one of said display gray levels, so as to equivalently display said non-display gray level with said one of said display gray levels.

32. (Canceled).

33. (Withdrawn) The display device according to claim 32, wherein said diffusion step includes:

a dither diffusion step of alternately adding or subtracting between fields or between pixels a difference between said non-display gray level and said one of said display gray levels that is close to said non-display gray level, so as to display said non-display gray level with said one of said display gray levels.

34. (Currently Amended) The display method according to claim ~~32~~ 31, wherein said ~~diffusion step~~ diffusing includes:

~~an error diffusion step of~~ diffusing a difference between said non-display gray level and said one of said display gray levels to pixels around a pixel having said non-display gray level.

35. (Withdrawn) A display method for providing a gray scale display by controlling in accordance with an input video signal individual pixels on a display panel so that each pixel emits light or does not emit light in individual N (N: natural number of not less than 1) sub-fields SF1, SF2, ···, SFN that are defined by dividing one field and arranged on a time base in a prescribed order:

wherein said N sub-fields SF1, SF2, ···, SFN are weighted to represent gray levels and said N sub-fields SF1, SF2, ···, SFN have small or equal weights in this order, and

said N sub-fields SF1, SF2, ···, SFN include at least one such sub-field SFM that a difference between the weight of the sub-field SFM and the sum of the weights from the sub-field SF1 to the sub-field SF(M-1) exceeds twice the weight of the sub-field SF1, whereby

the gray scale of the video signal includes at least two continuous non-display gray levels non-displayable by combining said N sub-fields between displayable gray levels by combining said N sub-fields and said at least two non-display gray levels belong to a first group or a second group respectively,

and wherein said display method comprises,

a first conversion step of, when the gray scale of the input video signal is a non-display gray level of the first group, converting the gray scale of said input video signal into a non-display gray level of the second group that is close to said non-display gray level of the first group or one of said display gray levels that is close to said non-display gray level of the first group; and

a second conversion step of, when the gray scale of the input video signal is a non-display gray level of the second group or said non-display gray level of the second group converted in said first conversion step, converting the gray scale of said input video signal into one of said display gray levels that is close to said non-display gray level of the second group.

36. (Withdrawn) The display method according to claim 35, further comprising:

an error diffusion step of diffusing a difference between said non-display gray level of the first group and said non-display gray level of the second group or said one of said display gray levels converted in said first conversion step to pixels around a pixel having said non-display gray level of the first group and,

a dither diffusion step of alternately adding or subtracting a difference between said non-display gray level of the second group and said one of said display gray levels converted in said second conversion step, so as to display said non-display

gray level of the second group with said one of said display gray levels that is close to said non-display gray level of the second group.

37. (Withdrawn) The display method according to claim 32, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display method further comprises,

a lower diffusion step of receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a selection step of selecting an output of said diffusion step when the gray level of the digital video signal output from said lower diffusion step is not less than the minimum value of said non-display gray level or selecting to display an output of said lower diffusion step when the gray level of the digital video signal output from said lower diffusion step is less than the minimum value of said non-display gray level.

38. (Withdrawn) The display method according to claim 32, wherein said video signal is a digital video signal expressed by a plurality of bits,

and wherein said display method further comprises,

a lower diffusion step of receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a selection step of selecting the digital video signal not yet diffused in said lower diffusion step when the gray level of the digital video signal output from said lower diffusion step is not less than the minimum value of said non-display gray level or selecting an output of said lower diffusion step when the gray level of the digital video signal output from said lower diffusion step is less than the minimum value of said non-display gray level,

and wherein said diffusion step includes a dither diffusion step of receiving the digital video signal output from said selection step, for alternately adding or subtracting a difference between said non-display gray level and one of gray levels that is close to said non-display gray level to diffuse between fields or between pixels.

39. (Withdrawn) The display method according to claim 36, wherein said video signal is a digital video signal expressed by a plurality of bits,

at least two continuous non-display gray levels are included between said display gray levels,

and wherein said display method further comprises,

a lower diffusion steps of receiving said digital video signal for diffusing between fields or between pixels data of a bit lower by one digit than a bit in said digital video signal corresponding to a minimum gray level expressed by the least significant sub-field having the minimum weight among weights representing gray levels, so as to display a gray level which is half said minimum gray level, and

a selection step of selecting to display an output of said lower diffusion step when the gray level of the digital video signal output from said lower diffusion step is less than the minimum value of said non-display gray level.